Michael Holloway's Publications

[1] P. J. Graydon and C. M. Holloway, "An investigation of proposed techniques for quantifying confidence in assurance arguments," *Safety Science*, vol. 92, pp. 53–65, Feb. 2017.

[2] P. J. Graydon and C. M. Holloway, "An investigation of proposed techniques for quantifying confidence in assurance arguments," Technical Memorandum NASA/TM-2016-219195, National Aeronautics and Space Administration, Hampton, VA, USA, May 2016.

[3] P. J. Graydon and C. M. Holloway, "Planning the unplanned experiment: Towards assessing the efficacy of standards for safety-critical software," tech. rep., NASA/TM-2015-218804, NASA Langley Research Center, Hampton VA, September 2015.

[4] P. J. Graydon and C. M. Holloway, "Planning the unplanned experiment: Towards assessing the efficacy of standards for safety-critical software," in *33rd International System Safety Conference (ISSC)*, (San Diego, CA, USA), August 2015.

[5] C. M. Holloway, "Explicate '78: Uncovering the implicit assurance case in do-178c," in *Engineering Systems for Safety. Proceedings of the 23rd Safety-critical Systems Symposium* (M. Parsons and T. Anderson, eds.), (Bristol, UK), pp. 205–225, Safety Critical Systems Club, February 2-5 2015. ISBN: 978-1505689082.

[6] P. J. Graydon and C. M. Holloway, ""Evidence" under a magnifying glass: Thoughts on safety argument epistemology," in *Proceedings of the IET System Safety and Cyber Security Conference*, (Bristol, UK), October 2015.

[7] C. M. Holloway, J. C. Knight, and J. A. McDermid, "Neither pollyanna nor chicken little: Thoughts on the ethics of automation," in *2014 IEEE International Symposium on Ethics in Engineering, Science and Technology*, (Chicago), May 23-24 2014.

[8] C. M. Holloway, "Making the implicit explicit: Towards an assurance case for do-178c," in *Proceedings of the 31st International System Safety Conference*, (Boston, Massachusetts), August 12-16 2013.

[9] C. W. Johnson, H. A. Oltedal, and C. M. Holloway, "Comparing the identification of recommendations by different accident investigators using a common methodology," in *7th IET International Conference on System Safety, Incorporating the Cyber Security Conference*, (Edinburgh, Scotland), October 15-18 2012.

[10] S. Brown and C. M. Holloway, "Analyzing a midair collision over the hudson river," in *Proceedings of the 30th International Conference on Systems Safety*, (Atlanta, Georgia), August 6-10 2012.

[11] C. M. Holloway, "Towards understanding the do-178c / ed-12c assurance case," in *7th IET International Conference on System Safety, Incorporating the Cyber Security Conference*, (Edinburgh, Scotland), October 15-18 2012.

[12] C. W. Johnson and C. M. Holloway, "A possible approach for addressing neglected human factors issues of systems engineering," in *Proceedings of the IET 6th International Conference on System Safety*, (Birmingham, UK), September 20-22 2011.

[13] C. M. Holloway and C. W. Johnson, "Reducing our ignorance: Finding answers to certain epistemic questions for software systems," in *Proceedings of the IET 6th International Conference on System Safety*, (Birmingham, UK), September 20-22 2011.

[14] C. W. Johnson and C. M. Holloway, "Safety arguments for next generation, location aware computing," in *Proceedings of the IET 5th International Conference on System Safety*, (Manchester, UK), October 18-20 2010.

[15] C. M. Holloway and C. W. Johnson, "Epistemic questions & answers for software system safety," in *Proceedings of the 28th International System Safety Conference*, (Minneapolis, Minnesota), August 30 - September 3 2010.

[16] C. M. Holloway, C. W. Johnson, and K. R. Collins, "A safety conundrum illustrated: Logic, mathematics, and science are not enough," in

Proceedings of the IET 5th International Conference on System Safety, (Manchester, UK), October 18-20 2010.

[17] C. M. Holloway and C. W. Johnson, "Towards a comprehensive consideration of epistemic questions in software system safety," in *Proceedings of the IET 4th International Conference on System Safety*, (London UK), October 25-26 2009.

[18] C. M. Holloway, "Safety case notations: Alternatives for the non-graphically inclined?," in *3rd IET International Conference on System Safety*, (Birmingham, UK), October 20-22 2008.

[19] C. M. Holloway and C. W. Johnson, "How past loss of control accidents may inform safety cases for advanced control systems on commercial aircraft," in *Third IET Systems Safety Conference*, (NEC, Birmingham, UK), The Institution of Engineering and Technology, October 2008.

[20] C. W. Johnson and C. M. Holloway, "A historical perspective on aviation accident investigation," *Safety Systems*, vol. 17, January 2008. Invited Paper for 50th Edition of Newsletter.

[21] C. W. Johnson, C. Shea, and C. M. Holloway, "The role of trust and interaction in GPS related accidents: A human factors safety assessment of the global positioning system (GPS)," in *Proceedings of the 26th International Conference on Systems Safety*, (Vancouver, Canada), International System Safety Society, August 25-29 2008.

[22] C. W. Johnson and C. M. Holloway, "A longitudinal analysis of the causal factors in major maritime accidents in the USA and Canada (1996-2006)," in *The Safety of Systems: Proceedings of the 15th Safety-Critical Systems Symposium* (F. Redmill and T. Anderson, eds.), (London UK), pp. 85–104, Springer-Verlag, February 2007.

[23] C. M. Holloway and C. W. Johnson, "A look at aircraft accident analysis in the early days: Do early 20th century accident investgation techniques have any lessons for today?," in *2nd IET Systems Safety Conference*, (Savoy Place, London, UK), pp. 235–240, Institution for Engineeering and Technology, October 2007.

[24] C. W. Johnson and C. M. Holloway, "The dangers of failure masking in fault tolerant software: Aspects of a recent in-flight upset event," in *2nd*

IET Systems Safety Conference, (Savoy Place, London, UK), pp. 60–65, The Institution of Engineering and Technology, October 2007.

[25] C. M. Holloway and C. W. Johnson, "Why system safety professionals should read accident reports," in *The First IET International Conference on System Safety*, (Savoy Place, London), pp. 325–331, The Institution of Engineering and Technology, June 2006.

[26] C. M. Holloway, "Software and accidents: A discussion about the past & speculation about the future." Invited talk at the 2006 FAA Software and Complex Electronic Hardward Standardization Conference, Atlanta, Georgia, June 2006.

[27] C. M. Holloway, "Safety, risk, and other misunderstood ideas," in *The First IET International Conference on System Safety*, (Savoy Place, London), The Institution of Engineering and Technology, June 2006.

[28] C. W. Johnson and C. M. Holloway, "Questioning the role of requirements engineering in the causes of safety-critical software failures," in *The First IET International Conference on System Safety*, (Savoy Place, London), pp. 352–360, The Institution of Engineering and Technology, June 2006.

[29] W. S. Greenwell, J. C. Knight, J. J. Pease, and C. M. Holloway, "A taxonomy of fallacies in system safety arguments," in *24th International System Safety Conference*, (Albuquerque, New Mexico), System Safety Society, 31 July - 4 August 2006.

[30] K. J. Hayhurst and C. M. Holloway, "Visions of automation and realities of certification," in *Infotech@Aerospace*, (Arlington, Virginia), September 2005. The version that passed through NASA review is not nearly as good as the earlier, unpublished version.

[31] C. M. Holloway, "Why you should read accident reports." Invited Talk at the 2005 FAA Software and Complex Electronic Hardware Standardization Conference, Norfolk, Virginia, July 2005.

[32] C. W. Johnson and C. M. Holloway, "A technique for showing causal arguments in accident reports," in *23rd International System Safety Conference*, (San Diego, California), System Safety Society, August 2005.

[33] C. M. Holloway and C. W. Johnson, "On the prevalence of organizational factors in recent U.S. transportation accidents," in *23rd International System Safety Conference*, (San Diego, California), System Safety Society, August 2005. NTRS does not have this paper available.

[34] W. S. Greenwell, J. C. Knight, and C. M. Holloway, "A taxonomy of fallacies in system safety arguments," Technical Report CS-2005-02, University of Virginia Department of Computer Science, December 2005.

[35] C. W. Johnson and C. M. Holloway, "'Systemic failures' and 'human error' in Canadian TSB aviation accident reports between 1996 and 2002," in *HCI in Aerospace 2004*, (Toulouse, France), pp. 25–32, EURISCO, September 2004.

[36] C. M. Holloway and C. W. Johnson, "Distribution of causes in selected us aviation accident reports between 1996 and 2003," in *22nd International System Safety Conference*, (Providence, Rhode Island), System Safety Society, August 2004.

[37] C. W. Johnson and C. M. Holloway, "The ESA/NASA SOHO mission interruption: Using the STAMP accident analysis technique for a software related 'mishap'," *Software: Practice and Experience*, vol. 33, pp. 1177–1198, July 2003.

[38] K. J. Hayhurst and C. M. Holloway, "Considering object oriented technology in aviation applications," in *22nd Digital Avionics Systems Conference*, (Indianapolis, Indiana), p. paper 3.B.1, October 12-16 2003.

[39] C. W. Johnson and C. M. Holloway, "The strengths and weaknesses of logic formalisms to support the causal analysis of mishaps," in *21st International System Safety Conference*, (Ottawa, Ontario, Canada), pp. 1133–1142, System Safety Society, August 2003.

[40] C. W. Johnson and C. M. Holloway, "A survey of logic formalisms to support mishap analysis," *Reliability Engineering and Systems Safety Journal*, vol. 80, no. 3, pp. 271–291, 2003.

[41] K. J. Hayhurst and C. M. Holloway, eds., *Proceedings of the Second Workshop on the Investigation and Reporting of Incidents and Accidents*, (NASA/CP-2003-212642, Hampton, Virginia), NASA Langley Research Center, September 2003.

[42] C. M. Holloway and K. J. Hayhurst, "Software system safety and the NASA aeronautics blueprint," in *21st International System Safety Conference* (G. Einarsson and B. Fletcher, eds.), (Ottawa, Ontario, Canada), pp. 1183–1192, System Safety Society, August 2003.

[43] C. M. Holloway, "Issues in software safety: Polly Ann Smith Co. v. Ned I. Ludd," in *20th International System Safety Conference*, (Denver, Colorado), System Safety Society, August 2002. An earlier version of this paper was presented at the 2nd meeting of the U.S. Software System Safety Working Group, Cambridge, MA, 19-20 February 2002.

[44] K. J. Hayhurst and C. M. Holloway, "Aviation software guidelines," *IEEE Software*, vol. 19, September/October 2002.

[45] K. Hanks, J. C. Knight, and C. M. Holloway, "The role of natural language in accident investigation and reporting guidelines," in *First Workshop on the Investigation and Reporting of Incidents and Accidents*, (Glasgow, Scotland), University of Glasgow, July 2002.

[46] K. J. Hayhurst and C. M. Holloway, "Challenges in software aspects of aviation systems," in *26th Annual NASA Goddard Software Engineering Workshop*, (Greenbelt, Maryland), pp. 7–13, November 2001.

[47] C. M. Holloway, ed., *Lfm2000: Fifth NASA Langley Formal Methods Workshop*, (NASA/CP-2000-210100, Hampton, Virginia), NASA Langley Research Center, June 2000.

[48] C. M. Holloway, "An overview of why ... because analysis (WBA)." A talk delivered to my branch, March 1999.

[49] C. M. Holloway, "Applying the results of 'a conditional resolution of the apparent paradox of self-deception' to research." A talk delivered to my branch, May 1999.

[50] J. D. Arthur, M. K. Groner, K. J. Hayhurst, and C. M. Holloway, "Evaluating the effectiveness of independent verification and validation," *IEEE Computer*, vol. 32, pp. 79–83, October 1999.

[51] C. M. Holloway, "From bridges and rockets, lessons for software systems," in *17th International System Safety Conference*, (Orlando, Florida), pp. 598–607, System Safety Society, August 1999. An invited

presentation based on this paper was also given to the 2001 MAPLD Conference.

[52] K. J. Hayhurst, C. M. Holloway, C. A. Dorsey, J. C. Knight, N. G. Leveson, G. F. McCormick, and J. C. Yang, "Streamlining software aspects of certification: Technical team report on the first industry workshop," Technical Memorandum TM-1998-207648, NASA Langley Research Center, April 1998.

[53] C. M. Holloway, "Why engineers should consider formal methods," in *16th AIAA/IEEE Digital Avionics Systems Conference*, vol. 1, (Irvine, CA), pp. 1.3–16 – 1.3.–22, October 1997.

[54] C. M. Holloway and K. J. Hayhurst, eds., *Lfm97: Fourth NASA Langley Formal Methods Workshop*, (NASA Conference Publication 3356, Hampton, Virginia), NASA Langley Research Center, September 1997.

[55] C. M. Holloway and R. W. Butler, "Impediments to industrial use of formal methods," *IEEE Computer*, vol. 29, pp. 25–26, April 1996.

[56] C. M. Holloway, "Software engineering and epistemology," *Software Engineering Notes*, vol. 20, April 1995.

[57] C. M. Holloway, ed., *Third NASA Langley Formal Methods Workshop*, (NASA Conference Publication 10176, Hampton, Virginia), NASA Langley Research Center, June 1995.

[58] R. Butler, J. Caldwell, V. Carreno, C. M. Holloway, P. Miner, and B. DiVito, "Nasa langley's research and technology transfer program in formal methods," in *10th Annual Conference on Computer Assurance (COMPASS 95)*, (Gaithersburg, MD), June 1995.

[59] C. M. Holloway, "Ada 95 and safety-critical software," in *14th AIAA/IEEE Digital Avionics Systems Conference*, pp. 504–509, November 1995.

[60] C. M. Holloway, B. DiVito, D. Guaspari, and M. Smith, "Formal methods: Fact vs. fiction." Panel Summary and Position Papers in TRI-Ada'94, Baltimore, Maryland, November 1994.

[61] R. W. Butler, B. L. DiVito, and C. M. Holloway, "Formal design and verification of a reliable computing platform for real-time control (phase 3 results)," Technical Memorandum 109140, NASA Langley Research Center, August 1994.

[62] C. M. Holloway, "Epistemology, software engineering, and formal methods," in *The Role of Computers in Research and Development at Langley Research Center*, (NASA Conference Publication 10159), pp. 570–595, October 1994. Extended abstract and presentation.

[63] S. J. Johnson, C. M. Holloway, and R. W. Butler, eds., *Second NASA Langley Formal Methods Workshop*, (NASA Conference Publication 10110, Hampton, Virginia), NASA Langley Research Center, November 1992.

[64] C. M. Holloway, "The syntax of Dragoon: Evaluation and recommendations," Technical Memorandum 4385, NASA Langley Research Center, July 1992.

[65] C. M. Holloway, "A survey of functional programming language principles," Technical Memorandum 89019, NASA Langley Research Center, Septembermber 1986.